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ABSTRACT

This booklet, which is designed to help individuals match themselves with jobs, discusses the common skills, abilities, and habits all employees need to bring to a job, as well as occupation-specific characteristics and skills. The first half of the booklet is a discussion of considerations in choosing a career that covers the following topics: (1) importance of making a good career choice; (2) mathematics and English skills required for most jobs; (3) sources of additional information on career choice; (4) personal and job characteristics (mathematics, English, science, computer, artistic, creative, persuasive, and interpersonal skills; mechanical ability; leadership and managerial ability); (5) personal skills and abilities; (6) work characteristics (travel between worksites, overnight travel, hazardous duties or conditions, operation of machinery or equipment, outdoor work, irregular work schedule, job stress, physical demands, economic sensitivity, geographic concentration); (7) occupational characteristics; and (8) education and training. The second half of the booklet is a table that classifies approximately 250 jobs according to 22 characteristics in the following four categories: personal skills and abilities; work characteristics; occupational characteristics; and education and training requirements. The jobs are divided into the following nine categories: executive, administrative, and managerial; professional and technical; marketing and sales; administrative support and clerical; service; mechanics, installers, and repairers; construction trades; production; and miscellaneous. (MN)

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Matching Yourself With the World of Work, 1998

U.S. Department of Labor
Bureau of Labor Statistics

Reprinted from the Fall 1998 issue
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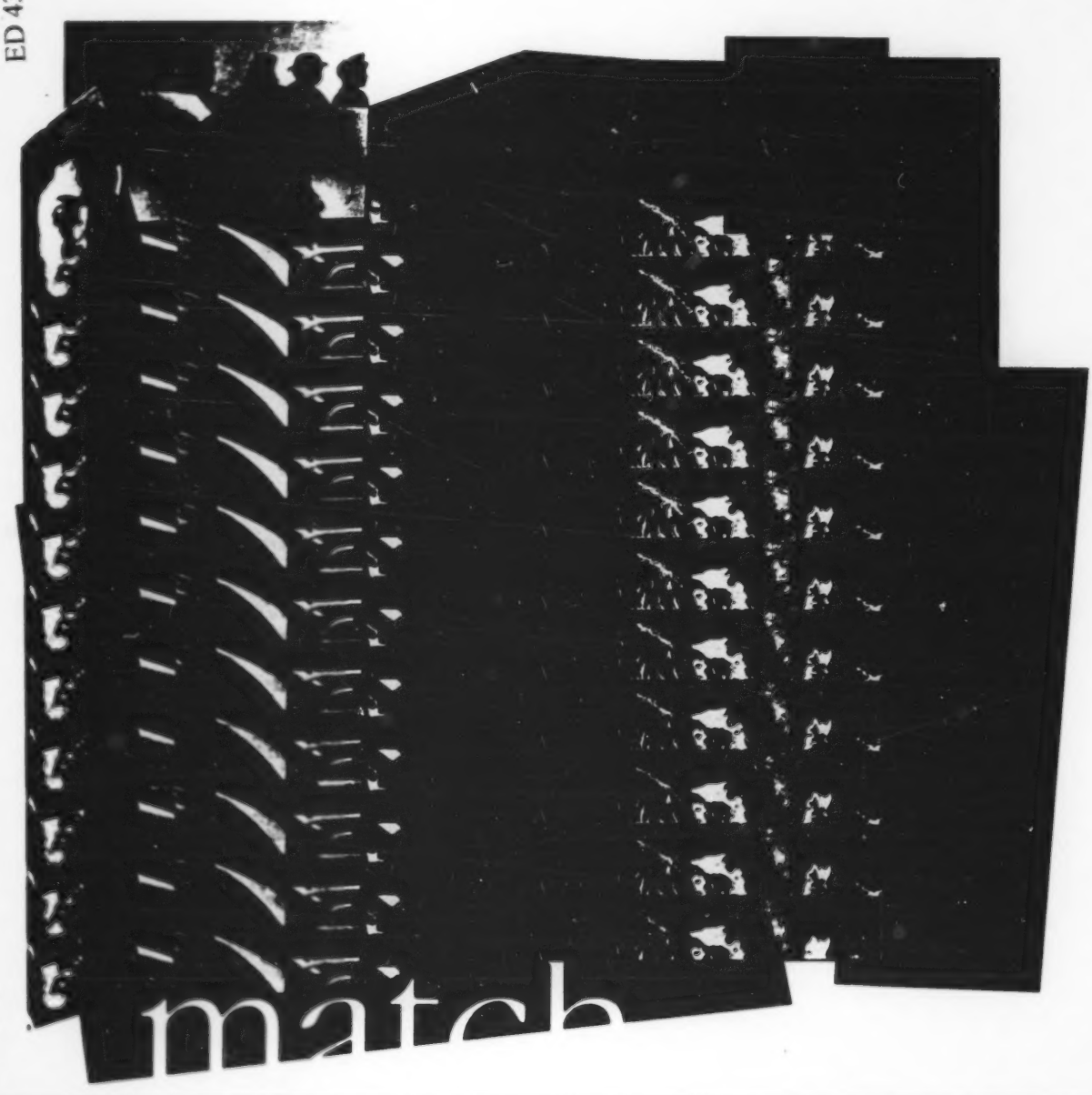

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Matching Yourself With the World of Work, 1998

by Erik A. Savisaar

The economy is expected to add almost 19 million jobs over the next decade. Start learning today the skills and training required for a career in tomorrow's work force.

Choosing a career is an important life decision. Pursuing a challenging and interesting occupation can lead to a rewarding career, while falling into job after job often fails to improve earnings or advancement prospects. The sooner you begin to consider career possibilities, the better prepared you will be to find your dream job.

There is no scientific formula for selecting a career. Work is a balancing act of costs and benefits. Having a good job will not lead to a rewarding career if you are not pleased with the work you do. For example, a creative person who likes computers but dislikes mathematics probably should not choose the computer engineering field simply for its fast job growth and high salaries. Such a person might be better suited to a career in graphic arts, a field that also uses computers but has less emphasis on math.

Of course, making a poor career choice does not necessarily mean spending the rest of your working life in a job you hate. Many people change careers because of external factors, such as changes in technology or business practices, or because of personal reasons, such as new interest in a different field. But self-assessment exercises may help prevent the time-consuming chore of switching careers. These exercises help you identify your personal interests, skills, talents, and abilities. Along with knowledge of specific occupational requirements, self-assessment exercises are a valuable tool in the career decisionmaking process.

Using the information in the accompanying table, you can match your personal characteristics and preferences with occupations that suit you best. This information cannot find you a particular job, but it can provide you with better occupational choices that might point you toward a fulfilling career.

There are some skills, abilities, and habits all employees need to bring to a job. Common traits all employers look for include the following.

Mathematics and English skills. Most jobs require employees to follow directions or add numbers. Employees should have basic skills in reading, writing, and math.

Communication skills. Almost all jobs require some interaction among workers. Employees must be able to exchange information with their peers and supervisors.

Consideration and respect. Employees should display professionalism and courtesy in dealing with their supervisors and coworkers. Employers are more likely to promote those who can work as part of a team and get along well with others.

Willingness to learn and an open mind. Employers hire workers who can accomplish tasks efficiently. Employees should strive to improve existing methods and be willing to learn new techniques and procedures.

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Sources of Additional Information

While this article provides valuable information for choosing a career, it is only a starting point for further research. After you use the table to narrow your career search, gather as much information as possible about the occupations that interest you. The following sources have additional information.

Libraries. Public libraries have a wealth of information on careers and career planning, including books, periodicals, and, in some, online information about industries and employment opportunities.

State employment service offices. These offices provide career guidance and listings of job vacancies in your area. In some places, Federally funded one-stop career centers, administered by State and local governments, provide the State employment service and offer an even broader variety of services to help people find jobs. (See Matthew Mariani's article, "One-Stop Career Centers: All in One Place and Everyplace," in the fall 1997 *OOQ*.)

School and college career centers. Advisors at colleges and university career centers give career advice, help with resume preparation, and suggest job search techniques. These services are available to enrolled students and recent graduates. Some centers also maintain listings of current job openings and may help arrange interviews with prospective employers.

Trade unions. Many work with employers in administering training programs and recruiting candidates for jobs. These unions also provide information on employment, salary, and certification requirements for their respective occupations.

Current and former employees. Network with friends and family. You may be able to meet with someone working in an occupation that interests you. Current and former workers can provide insight about the practical aspects of working in a particular occupation.

The Internet. The Internet makes available information about industries, occupations, and companies. In addition, colleges and universities maintain Web sites with information on courses and programs they offer.

Professional associations. Associations represent various industries and occupations. Many of them also provide information on employment, training, earnings, and certification requirements for specific occupations.

The Occupational Outlook Handbook. The Bureau of Labor Statistics publishes the *Handbook* every 2 years. It provides information on the nature of work, working conditions, training, salaries, and job outlook for about 250 occupations. This and other BLS publications are usually available in libraries, career centers, and offices of school and employment counselors. The *Handbook* can also be found online at **stats.bls.gov/ocohome.htm**

Matching Personal and Job Characteristics

People who feel successful in their careers enjoy their work. Prospective employers usually have an idea of what they are looking for in a worker, and new workers bring with them certain expectations of a job. Working in an occupation that focuses on your strengths will help you get the most out of your abilities. By matching your interests to occupational requirements, you increase the chances of doing work that suits you.

The first step in planning a career is to do self-assessment exercises. Think about your strong and weak skills relevant to careers that interest you. Research the industries and occupations you find interesting, focusing on those that would allow you to use your strongest skills. Also consider how much postsecondary education you will need for a particular career. Assess your goals for salary and professional job growth.

The next step is to learn about the occupations that interest you. You should begin by looking at the educational requirements. Check to see if the skills and abilities required match the ones you already have. Explore related occupations. You might have narrowed your job choices, but you also may have added a few. Now it's time to continue researching the occupations that interest you.

Because the table provides an overview of almost 250 occupations, certain characteristics are generalized. Skill requirements and work characteristics are based on the norm for a large proportion of workers in an occupation. Job specialization in the same occupation may require different levels of skill and education. For example, an elementary school English teacher needs a lower level of mathematical proficiency than a high school calculus teacher does. Although kindergarten, elementary, and secondary school teachers are grouped together, all teachers are listed as requiring only basic math skills since the majority of teachers do not need such a high level of math proficiency.

Finally, while the number of expected job openings indicates potential employment opportunities, competition depends on the number of workers applying for a particular job. Some jobs with significant growth have more workers than openings, leading to greater possibilities for job competition and unemployment.

Classifying the Occupations

The table classifies occupations according to 22 characteristics. The characteristics are grouped into four sections: personal skills and abilities, work characteristics, occupational characteristics, and education and training requirements. (See the legend on page 8.)

Occupations included in the explanations that follow are illustrative only. Use the table to identify other occupations that meet specific criteria.

Personal Skills and Abilities

The first eight criteria classify occupations in terms of personal skills and abilities required. For level 1 personal skills and abilities, you need a practical level of the skill or ability to work in the occupation. Level 2 requires more advanced skills or abilities because the characteristic is a prominent feature of an occupation.

Each of the following skill and ability characteristics has a primary or secondary role in the occupation. The requirement of a practical or advanced level of knowledge and ability is also specified. Finally, a blank indicates basic level only.

Math skills. Math skills include the ability to perform calculations and manipulate data. Occupations that require math skills at level 1, including pharmacists and dietitians, involve the use of algebra, geometry, and basic statistics. Level 2 occupations include those that require linear algebra, calculus, or other higher levels of math. Operations research analysts and engineers must have this level of skill.

English skills. English skills at level 1 include a good command of vocabulary and grammar and the ability to read and prepare correspondence, observations, and instructions; these skills are required for nearly every occupation. Level 2 English skills, important for reporters and public relations specialists, include the ability to comprehend and communicate complex instructions and ideas, as well as the ability to write clearly, persuasively, and creatively. In addition, workers with level 2 skills should have a vocabulary appropriate for understanding and expressing sophisticated subjects.

Science skills. These skills refer to knowledge of the physical or life sciences. Science skills at level 1 require an understanding of the principles of the physical and life sciences—biology, chemistry, geology, and physics—and are used by jewelers and surveyors. Level 2 science skills require an in-depth, theoretical knowledge of one or more of the physical and life sciences; chemists and meteorologists must have this skill level.

Computer skills. Computer skills refer to the ability to operate a computer and process data. Level 1 skills include the ability to use a computer to enter and manipulate data, make calculations, compose and print documents, access the Internet, or send electronic mail; administrative assistants and financial managers are among the occupations requiring this level of skill. Level 2 computer skills require a thorough understanding of computer hardware and software and how they interact. These skills are important for systems analysts and industrial production managers.

Artistic and creative skills. These are the ability to form ideas to solve problems, communicate information, or express feelings, thoughts, and emotions. At level 1, they include devising original ways of approaching an issue or making progress; level 1 skills are required of teachers and recreational therapists. Level 2 skills are useful for accomplishing projects and dealing with problems in new and unique ways. Architects and designers must have these skills.

Persuasive and interpersonal skills. These are skills that allow positive interaction between people and the ability to sway the actions, opinions, or beliefs of others. Occupations requiring persuasive and interpersonal skills usually involve frequent contact with the public. Level 1 skills include the

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ability to deal with others courteously and are required of physicians and bank tellers. Level 2 skills, important for lawyers and insurance agents, include the ability to sell products, ideas, or services convincingly.

Mechanical ability. Mechanical ability is an understanding of the relationship between moving parts. It involves knowledge of how objects connect and operate, as well as ability to diagnose and troubleshoot mechanical failures. At level 1, mechanical ability requires skill in working with tools to assemble or repair equipment or machinery and is needed by telephone installers and opticians. At level 2, important for millwrights and mechanical engineers, it requires the ability to design or modify equipment or machinery.

Leadership and managerial ability. This is the ability to direct and organize others to achieve common goals. Effective communication skills are also essential. Level 1 ability, required of property managers and counselors, includes accepting responsibility for the work and actions of others. Level 2 ability includes motivating and inspiring others to achieve a common goal; education administrators and general managers require these skills.

Work Characteristics

The next 10 criteria classify occupations based on how frequently or to what degree certain occupational criteria prevail. At level 1, the condition is an important or occasional characteristic of the occupation or is partially met. At level 2, the responsibility or condition is an essential or frequent characteristic or is completely met. For characteristics common to most occupations, no criteria are noted below or on the table.

Travel between worksites. These occupations require workers to visit clients outside the worksite premises. Often, workers drive to serve clients, but some jobs require workers to use other forms of transit including public transportation. Occupations at level 1 involve occasional, but not constant, travel between worksites; examples are photographers and respiratory therapists. Occupations at level 2, involving frequent, daily travel between worksites, include messengers and elevator installers.

Overnight travel away from home. Some jobs require travel away from home that includes staying overnight in a hotel. Level 1 occupations, such as lawyers and management analysts, involve overnight travel occasionally—perhaps a few trips per month or less of not many days' duration. Level 2 occupations involve more frequent overnight travel, usually several trips a month for an extended number of days or even weeks. Actors and pilots have level 2 requirements.

Hazardous duties or conditions. Occupations having hazardous duties and conditions require adherence to safety procedures to avoid injury or harmful exposure. On-the-job injury rates in these occupations may be higher than in others if employees fail to stay alert and take precautionary measures. Level 1 occupations that involve a minor degree of hazard, such as exposure to chemicals or unsafe worksite conditions, include construction inspectors and upholsterers. Level 2 occupations with a major degree of hazard, involving potentially life-threatening situations, include correctional officers and firefighters.

Operates equipment or machinery. These occupations require daily operation of equipment, machinery, or motorized vehicles, such as cranes, tractors, and trucks, as well as saws, printing presses, and x-ray machines. Many of these occupations require workers to follow procedures to avoid property damage and personal injury. Occupations that require occasional operation of equipment or machinery, such as janitors and plumbers, are designated as level 1. Occupations requiring frequent operation, including carpenters and printing press operators, are designated level 2.

Outdoor work. Occupations involving outdoor work expose

workers to the elements. Level 1 occupations involve occasional outdoor work but also require that some work be performed indoors; examples are private detectives and automotive mechanics. Level 2 occupations that require such work frequently, with most of the work day spent outside, include groundskeepers and roofers.

Irregular work schedule. These occupations have schedules outside the standard 9-to-5, Monday-through-Friday workweek. Irregular schedules include shift, weekend, split schedule, and seasonal work, as well as work requiring employees to be "on call." Level 1 occupations, such as stock clerks and real estate agents, have somewhat irregular schedules—in other words, their day may extend beyond a standard workday and include weekends. Level 2 occupations, usually found in businesses and industries that operate around the clock, have extremely irregular schedules; examples are nurses and hotel desk clerks.

Job stress or pressure. Stressful occupations involve either tremendous pressure to complete work on deadlines or concerns over safety or other work related issues. This broad category, ranging from customer service to health care, includes jobs that can cause great anxiety both during and after work. Occupations that involve a minor degree of stress require constant attention to detail for a variety of reasons and are designated as level 1; examples are social workers and flight attendants. Occupations involving a major degree of stress, such as having responsibility for a large number of people in potentially volatile situations, are designated as level 2. These include air traffic controllers and physicians.

Physically demanding. Occupations considered physically demanding may require material moving, lifting, and handling. Workers in physically demanding jobs may also be required to be on their feet for long periods or may need manual dexterity and precise movement. Level 1 occupations that require occasional lifting and movement include chiropractic and recreation work. Level 2 occupations, such as logging or stonemason occupations, require a considerable amount of heavy lifting or constant movement.

Economically sensitive. These occupations have historically prospered or suffered along with the economy. Occupations at level 1 are somewhat affected by the U.S. economy —that is, employment increases or decreases with the economy, but not markedly so. Occupations with level 1 characteristics include taxidrivers and travel agents. Employment in occupations at level 2, such as truckdrivers and retail sales workers, grows or contracts with economic upturns and downturns to a much greater degree than at level 1.

Geographically concentrated. Occupations with this characteristic have an unusually high proportion of jobs concentrated in parts of the United States. Occupations with employment in a few States or regions, such as nuclear engineers and aircraft mechanics, are designated as level 1. Occupations with employment in a smaller number of States or regions, including water transportation workers and aerospace engineers, are designated as level 2—a higher level of employment concentration.

Occupational Characteristics

The next three criteria divide occupations into four groups of equal employment size. Occupations are then rated as very high, high, low, or very low for part-time availability, median earnings, and expected annual job openings. The latter number includes job openings projected to result from job growth and the need to replace individuals who change occupations or stop working in the occupation.

Education and Training

The education and training requirement for each occupation is classified into 1 of 11 categories identified in the legend for the table. Because there are a variety of ways to enter a field, occupations in the table are classified by the education and training background most workers need to be considered qualified for a job. These categories represent the minimum education and training requirement for entering and progressing in an occupation.

For occupations requiring a college degree, the table indicates the level of degree workers need. For occupations requiring on-the-job training without attending postsecondary school, it notes the length of time workers must undergo training to become proficient. Remember, these education and training categories reflect the most common requirements for entering an occupation. For example, the educational requirement for teacher is level 5, bachelor's degree. This is because teachers in all States are required to have a bachelor's degree for certification to teach in public schools. But in some States, teachers in public schools must have a master's degree while teachers in private schools may not have the same licensing requirements as do those in public schools. OOQ

Personal skills and abilities

Symbol	Level	Definition
None	—	The skill or ability is required at a basic level and is therefore not noted.
o	1	A secondary, but important, characteristic of an occupation. A practical level of knowledge and ability is required.
•	2	A primary, critical characteristic of an occupation. An advanced level of of knowledge and ability is required.

Work characteristics

Symbol	Level	Definition
None	—	The characteristic is uncommon and is therefore not noted.
o	1	A secondary, but important, characteristic of an occupation. The condition or requirement is met occasionally or somewhat.
•	2	A primary, critical characteristic of an occupation. The condition or requirement is met frequently or completely.

Occupational characteristics

Symbol	Level	Definition
(VH)	Very High	The top 25 percent of all occupations, based on total employment.
(H)	High	The top 50 to 25 percent of all occupations, based on total employment.
(L)	Low	The bottom 25 percent to the top 50 percent of all occupations, based on total employment.
(VL)	Very Low	The bottom 25 percent of all occupations, based on total employment.

Education and training category

Symbol	Level	Definition
1	First professional degree (e.g., M.D., J.D.) beyond high school	Completion of a 6-year academic program
2	Doctoral degree	Completion of a 3-year academic program beyond a bachelor's degree
3	Master's degree	Completion of a 1- to 2-year academic program beyond a bachelor's degree
4	Work experience plus a bachelor's degree	Completion of a 4-year academic program or higher degree beyond high school, plus related occupational experience
5	Bachelor's degree	Completion of a 4-year academic program beyond high school
6	Associate degree	Completion of a 2-year academic program beyond high school
7	Postsecondary vocational training	Completion of a vocational training program
8	Work experience	Related occupational experience leading to development of specific skills
9	Long term on-the-job training	More than 1 year of on-the-job training or a combination of training and formal classroom instruction
10	Moderate term on-the-job training	1 to 12 months of on-the-job training
11	Short term on-the-job training	Up to 1 month of on-the-job training

	Personal Skills							Work Characteristics										Occupational Characteristics			
	Math skills	English skills	Science skills	Computer skills	Artistic/creative skills	Persuasive/interpersonal skills	Mechanical ability	Leadership/managerial ability	Travel between worksites	Overnight travel away from home	Hazardous duties/conditions	Operates machines or equipment	Outdoor work	Irregular work schedule	Job stress/pressure	Physically demanding	Economically sensitive	Geographically concentrated	Part time availability	Median earnings	Expected job openings*	Education and training
Executive, Administrative, and Managerial Occupations																						
Accountants and auditors	●	○		○		○				○			○	○						L	VH	L	5
Administrative services managers	○	○		○		●		●	○					○						VL	VH	VL	4
Budget analysts	●	○		○										○						L	VH	VL	5
Construction and building inspectors	○	○	○	○		○			●	○	○		○				○	○		L	VH	VL	8
Construction contractors and managers	○	○	○	○		●	○	●	●	●	○		○	○	●		○	○		VL	VH	VL	5
Cost estimators	●	○	○	○					●				○							L	VH	VL	5
Education administrators	○	●		○		●		●						○	○					L	VH	VL	4
Employment interviewers		○		○		●											○			VL	H	VL	5
Engineering, science, and computer systems managers	●	●	●	●		●	○	●						○			○			VL	VH	VL	4
Farmers and farm managers	○	○	○	○			●	○			○	●	●	●	○	●			●	H	VL	L	4
Financial managers	●	○		○		●		●	○	○										VL	VH	L	4
Funeral directors	○	○	○	○	○	●		◑									○	○		VL	H	VL	9
General managers and top executives	○	●		○		●		●	●	●				○	●					VL	VH	H	4
Government chief executives and legislators	○	●		○		●		●	○	●				○	●					VL	VH	VL	4
Health services managers	○	○	○	○		●		●		○				○						VL	VH	L	4
Hotel managers and assistants		○		○		●		●		●				●	●					VL	VH	H	7
Human resources specialists and managers		○		○		●		○	○	○							○			VL	VH	L	4
Industrial production managers	●	○		●		●	○	●				○		○	●					VL	VH	VL	5
Inspectors and compliance officers, except construction				○	○	○			●	○				○						VL	H	VL	8
Insurance underwriters	●			○					○	○										VL	H	VL	5
Loan officers and counselors	○			○		●			○						○					L	VH	VL	5
Management analysts and consultants	○	●		○	○	●		●	●	○				○	○					L	VH	VL	4
Marketing, advertising, and public relations managers	○	●		○	○	●		●	●	●				○	●					VL	VH	L	4
Property managers	○	○		○		●		○	●					○	○					H	H	VL	5
Purchasers and buyers	○	○		○		●			○	○				○	○					VL	VH	L	5
Restaurant and food service managers		○		○	○	●		●						●	●		○			L	H	L	8

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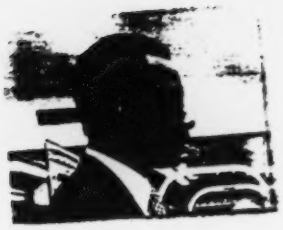

	Personal Skills								Work Characteristics										Occupational Characteristics			
	Math skills	English skills	Science skills	Computer skills	Artistic/creative skills	Persuasive/interpersonal skills	Mechanical ability	Leadership/managerial ability	Travel between worksites	Overnight travel away from home	Hazardous duties/conditions	Operates machines or equipment	Outdoor work	Irregular work schedule	Job stress/pressure	Physically demanding	Economically sensitive	Geographically concentrated	Part time availability	Median earnings	Expected job openings*	Education and training
Professional and Technical Occupations																						
Air transportation-related occupations																						
Aircraft pilots	●	○	●	○			○		●	●	●	●	○	●	●	○	○	○	L	VH	VL	5
Air traffic controllers	○	○		○		●		○				●		●	●				L	VH	VL	9
Engineers and engineering technicians																						
Engineers																						
Aerospace engineers	●	●	●	●			●					○					○	●	VL	VH	VL	5
Chemical engineers	●	●	●	●			○					○							VL	VH	VL	5
Civil engineers	●	●	●	●			●		○	○		○	○				○		VL	VH	VL	5
Electrical and electronics engineers	●	●	●	●			○					○							VL	VH	VL	5
Industrial engineers	●	●	●	●			●		●			○							VL	VH	VL	5
Mechanical engineers	●	●	●	●			●					●							VL	VH	VL	5
Metallurgical, ceramic, and materials engineers	●	●	●	●			○					●							VL	VH	VL	5
Mining engineers	●	●	●	●			○		○	○	○	○	○				○	●	VL	VH	VL	5
Nuclear engineers	●	●	●	●			○					○						○	VL	VH	VL	5
Petroleum engineers	●	●	●	●			○		●	●		○	○				●	●	VL	VH	VL	5
Engineering technicians	●	○	○	○			○				○	●				○			VL	VH	L	6
Architects, surveyors, and drafters																						
Architects	●	○	●	○	●	○			○	○					○		●		L	VH	VL	5
Drafters	○	○	○	○	○	○											○		VL	H	VL	7
Landscape architects	●	○	●	○	●	○			○				○				●		L	VH	VL	5
Surveyors and mapping scientists	○	○	○	○					●	●		○	●			○	●		L	H	VL	7
Computer, mathematical, and operations research occupations																						
Actuaries	●	○		○															VL	VH	VL	5
Computer programmers	●			●		○													VL	VH	VL	5
Computer scientists, computer engineers, and systems analysts	●	○	●	●		○		○											VL	VH	L	5
Mathematicians	●	○		○															VL	VH	VL	2
Operations research analysts	●	●		●		○								○					VL	VH	VL	3
Statisticians	●	○		○															VL	VH	VL	5

	Personal Skills								Work Characteristics											Occupational Characteristics			
	Math skills	English skills	Science skills	Computer skills	Artistic/creative skills	Persuasive/interpersonal skills	Mechanical ability	Leadership/managerial ability	Travel between worksites	Overnight travel away from home	Hazardous duties/conditions	Operates machines or equipment	Outdoor work	Irregular work schedule	Job stress/pressure	Physically demanding	Economically sensitive	Geographically concentrated	Part time availability	Median earnings	Expected job openings*	Education and training
Scientists and science technicians																						
Life scientists																						
Agricultural scientists	●	●	●	○				○			○	●				○			VL	VH	VL	5
Biological and medical scientists	●	●	●	○							○					○			L	VH	VL	2
Foresters and conservation scientists	●	●	●	○		○		●	○	○		●			○	○	●		VL	VH	VL	5
Physical scientists																						
Chemists	●	●	●	○						○	○								VL	VH	VL	5
Geologists and geophysicists	●	●	●	○				●	●		●	○			○	○			VL	VH	VL	5
Meteorologists	●	●	●	●							○		○	○					VL	VH	VL	5
Physicists and astronomers	●	●	●	●				○			●					○	●		VL	VH	VL	2
Science technicians	●	○	○	○		○	○		○	○	●				○				L	H	VL	6
Legal occupations																						
Lawyers and judges		●		○	○	●		●	○				○	●					L	VH	VL	1
Paralegals		○		○		●								○					L	H	VL	6
Social scientists																						
Economists and marketing research analysts	●	●		○		○				○				○					L	VH	VL	5
Psychologists	○	●	●	○	○	●				○			○	○					H	VH	VL	3
Urban and regional planners	○	●	●	○	●	●			○	○				○		○			L	VH	VL	3
Social and recreation workers																						
Recreation workers		○			○	●		○				●	○		○				H	VL	VL	5
Social and human service assistants		○				●		●					○	○					VH	L	L	10
Social workers		●	○		○	●		●					○	○					L	H	L	5
Clergy																						
Protestant ministers		●			○	●	●	○					○	○					L	H	VL	1
Rabbis		●			○	●	●	○					○	○					L	H	VL	1
Roman Catholic priests		●			○	●	●	○					○	○					L	H	VL	1
Teachers, counselors, and library occupations																						
Adult education teachers	○	●	○	○	○	●		○				○		●					VH	VH	L	8
Archivists and curators	○	●	●	○	●	○			○	○						○	○	●	H	H	VL	3
College and university faculty	●	●	●	●	●	●		○						○					VH	VH	L	2
Counselors		●	○		○	●		○						○	○				L	VH	VL	3

	Personal Skills								Work Characteristics											Occupational Characteristics			
	Math skills	English skills	Science skills	Computer skills	Artistic/creative skills	Persuasive/interpersonal skills	Mechanical ability	Leadership/managerial ability	Travel between worksites	Overnight travel away from home	Hazardous duties/conditions	Operates machines or equipment	Outdoor work	Irregular work schedule	Job stress/pressure	Physically demanding	Economically sensitive	Geographically concentrated	Part time availability	Median earnings	Expected job openings*	Education and training
Librarians		●		○		●							○		○				H	VH	VL	3
Library technicians		○		○		●							○		○				H	L	VL	11
School teachers—Kindergarten, elementary, and secondary	○	●	○	○	○	●		○					○	○	○				L	VH	VH	5
Special education teachers	○	●	○	○	○	●		○					○	○	○				L	VH	VL	5
Health diagnosing occupations																						
Chiropractors	○	●	●	○		●						●		○		○			L	VH	VL	1
Dentists	○	●	●	○		●					●	●							H	VH	VL	1
Optometrists	○	●	●	○		●						●							L	VH	VL	1
Physicians	○	●	●	○		●		○			●	●		●	●	○			VL	VH	VL	1
Podiatrists	○	●	●	○		●						●		○					L	VH	VL	1
Veterinarians	○	●	●	○		○		○			○	●		○	●	○			VL	VH	VL	1
Health assessment and treating occupations																						
Dietitians and nutritionists	○	●	●			●													H	H	VL	5
Occupational therapists		●	●		○	●						●		○		●			H	VH	VL	5
Pharmacists	○	●	●	○		●							●	○					L	VH	VL	5
Physical therapists		●	●			●						●		○		●			H	VH	VL	5
Physician assistants	○	●	●	○		●		○			●	○		●	●	○			H	VH	VL	5
Recreational therapists		●	●		○	●		○					○	○		○			H	H	VL	5
Registered nurses	○	●	●	○		●					●	○		●	●	○			H	VH	L	6
Respiratory therapists	○	●	●			●		○			●	●		○	○				H	H	VL	6
Speech-language pathologists and audiologists	○	●	●	○		●		○				○		○					H	VH	VL	3
Health technologists and technicians																						
Cardiovascular technologists and technicians	○	○	○	○		○					●	●		○	●				H	H	VL	6
Clinical laboratory technologists and technicians	○	○	●	○							●	●		○					H	H	VL	5
Dental hygienists		○	○			○					●	●		○		○			VH	VH	VL	6
Dispensing opticians	○	○	○			○	○					●		○			○		L	L	VL	9
Electroneurodiagnostic technologists	○	○	○	○		○						●							H	H	VL	10
Emergency medical technicians	○	○	○			●			●		●	●	●	●	●	●			H	L	VL	7
Health information technicians	○	○	○	○															H	L	VL	6

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Licensed practical nurses	○	○	○			●					●	○		●		○			H	H	VL	7
Nuclear medicine technologists	○	○	○	○		○					●	●		○					H	VH	VL	6
Pharmacy technicians	○	○	○			○								●	○				H	L	VL	10
Radiologic technologists	○	○	○	○		○			○		●	●		●					H	H	VL	6
Surgical technologists	○	○	○			○					●	●		●	●	○			H	H	VL	7
Communications-related occupations																							
Broadcast technicians	○	○	○				●				○	●	○	●	○	○			L	H	VL	7
Public relations specialists		●		○	●	●		●	○	●				○	○			●	L	H	VL	5
Radio and television announcers and newscasters		●			●	●			●	○				●	●				VH	L	VL	8
Reporters and correspondents		●		○	●	●			●	○				●	●	○	○		L	H	VL	5
Writers and editors		●		○	●									●	○				L	VH	VL	5
Visual arts occupations																							
Designers		○		○	●	●			○					○			●		H	VH	VL	5
Photographers and camera operators			○		●	○		○	●	○			○	○		○	○		H	L	VL	10
Visual artists		○		○	●									○			○		H	H	VL	4
Performing arts occupations																							
Actors, directors, and producers		●			●	●		○	●	●			○	●	○	○	○	●	H	H	VL	9
Dancers and choreographers					●	●			●	●				●	○	●	○	●	H	VH	VL	7
Musicians					●	●			●	●				●			○	○	VH	H	VL	9
Marketing and Sales Occupations																							
Cashiers						○								●	○	○	●		VH	VL	VH	11
Counter and rental clerks						○								●		○	●		VH	VL	L	11
Insurance agents and brokers	○	○		○		●			○					○	○		○		L	VH	VL	5
Manufacturers' and wholesale sales representatives	○	○		○		●			●	●				○	○		○		L	VH	L	10
Real estate agents, brokers, and appraisers	○	○		○		●			●					○	○		○		L	VH	VL	8
Retail sales worker supervisors and managers		○		○		●		●						●	●		○		L	H	H	8
Retail sales workers						●								●	○	○	●		VH	VL	VH	11
Securities and financial services sales representatives	○	○		○		●									●		●		L	VH	VL	5

	Personal Skills								Work Characteristics											Occupational Characteristics			
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Services sales representatives	○	○		○		●		●	○				○	○		○		L	VH	VH	10
Travel agents		○		○		●								○		○		H	L	VL	7
Administrative Support Occupations, Including Clerical																						
Adjusters, investigators, and collectors	○	○		○		○		●				○	○					L	H	H	10
Bank tellers				○		○												VH	L	L	11
Clerical supervisors and managers				○		●	●											VL	H	L	8
Computer operators	○			●									○					VL	H	VL	10
Court reporters, medical transcriptionists, and stenographers		●		○				○						○				H	H	VL	7
General office clerks				○														VH	L	VH	11
Information clerks																						
Hotel and motel desk clerks				○		●							●	○				H	VL	VL	11
Interviewing and new accounts clerks				○		●												VH	L	VL	10
Receptionists				○		●												VH	L	H	11
Reservation and transportation ticket agents and travel clerks				○		●							●	○	○		○	H	L	VL	11
Loan clerks and credit authorizers, checkers, and clerks				○		○												L	L	VL	11
Mail clerks and messengers								●			○	●			●			H	L	VL	11
Material recording, scheduling, dispatching, and distributing occupations																						
Dispatchers				○		●	○						●	○				L	H	VL	10
Stock clerks											○		○		●	○		L	VL	H	11
Traffic, shipping, and receiving clerks															●	○		L	L	L	11
Postal clerks and mail carriers				○				●			●	●	○	○	●			L	H	H	11
Record clerks																						
Billing clerks and billing machine operators				○														L	L	VL	11
Bookkeeping, accounting, and auditing clerks				○														VH	L	H	10
Brokerage clerks and statement clerks				○													●	L	H	VL	11
File clerks				○											○			VH	L	L	11
Library assistants and bookmobile drivers		○		○		○		○					○		○			VH	L	VL	11

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Order clerks				○		○												L	L	VL	11
Payroll and timekeeping clerks				○		○												L	H	VL	11
Personnel clerks				○		○												VL	H	VL	11
Secretaries				○		●								○				H	H	H	7
Teacher aides	○	○			○	●												VH	VL	H	11
Telephone operators				○		●							○	●				H	L	VL	10
Typists, word processors, and data entry keyers				○														H	L	L	7
Service Occupations																					
Food and beverage service occupations																					
Chefs, cooks, and other kitchen workers			○		○	○					○	○		●	○	○	○	VH	VL	VH	10
Food and beverage service occupations						●						○		●	○	○	○	VH	VL	VH	11
Health service occupations																					
Dental assistants			○			○					○	○				○		VH	L	VL	10
Medical assistants		○	○	○		○					○							H	H	VL	10
Nursing aides and psychiatric aides			○			●					○			●	○	●		H	L	H	11
Occupational therapy assistants and aides			○			●	○					○		○		○		H	H	VL	10
Physical and corrective therapy assistants and aides			○			●						○		○		○		H	L	VL	10
Personal, buildings, and grounds service occupations																					
Barbers and cosmetologists					○	●					○	●		○		○	○	VH	VL	VL	7
Flight attendants						●		●					●	○	○	○	○	VH	VH	VL	9
Homemaker-home health aides						●		●		○			○		○			H	VL	L	11
Janitors and cleaners and cleaning supervisors												○		○		○		H	VL	VH	8
Landscaping, groundskeeping, nursery, greenhouse and lawn service occupations			○		○			●		○	●	●	○		●	○		H	L	L	10
Pest controllers			○			○		●		●	●	●	○		○		○	L	L	VL	10
Preschool teachers and child-care workers					○	●		○						○	○			VH	VL	H	5
Private household workers						○					○	○			○	○		VH	VL	L	11
Veterinary assistants and nonfarm animal caretakers			○								○	○		●		○		VH	VL	VL	11

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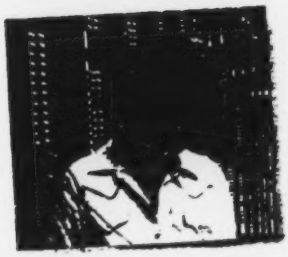
Protective service occupations																								
Correctional officers						●		○			●		○	●	●	●			VL	H	VL	9		
Firefighting occupations			○			○		○	●		●	●	●	●	●	●			VL	H	VL	8		
Guards						○		○			●			●	●	●			H	L	L	11		
Police, detectives, and special agents		○				●		○	●		●		●	●	●	●			VL	VH	VL	8		
Private detectives and investigators						●			●				○	●	●	○			H	L	VL	10		
Mechanics, Installers, and Repairers																								
Aircraft mechanics, including engine specialists	○		○				●				○	●	○	○		●	○	○	VL	VH	VL	7		
Automotive body repairers	○		○		○		○				○	●				●	○		VL	H	VL	9		
Automotive mechanics	○		○	○			●				○	●	○			●			VL	H	L	7		
Diesel mechanics	○		○	○			●				○	●	○			●			VL	H	VL	9		
Electronic equipment repairers																								
Commercial and industrial electronic equipment repairers	○		○	●			●		●		○	●		○		○			VL	H	VL	7		
Communications equipment mechanics	○		○	○			○		●		○	●		○		○			VL	VH	VL	7		
Computer and office machine repairers	○		○	●			○		●		○	●				○			VL	H	VL	7		
Electronic home entertainment equipment repairers	○		○				○		○		○	●				○	○		VL	VH	VL	7		
Telephone installers and repairers	○		○				○		●		○	●		○		○			VL	VH	VL	7		
Elevator installers and repairers	○		○				●		●		○	●		○		●			VL	VH	VL	9		
Farm equipment mechanics	○		○				●		●		●	●	●	○		●		○	VL	L	VL	9		
General maintenance mechanics			○				●				●	●		○		●			L	L	L	11		
Heating, air-conditioning, and refrigeration technicians	○		○				●		●		●	●	○	○		●			VL	H	VL	9		
Home appliance and power tool repairers	○						●		●		●	●		○		●			VL	H	VL	9		
Industrial machinery repairers	○		○				●		●		●	●		○		●			VL	H	VL	9		
Line installers and cable splicers							○		●		●	●	●	○		●			VL	VH	VL	9		
Millwrights	○		○				●		○		●	●		○		●	○	●	VL	VH	VL	9		
Mobile heavy equipment mechanics	○		○				●		●		●	●	○			●	○		VL	VH	VL	9		
Motorcycle, boat, and small-engine mechanics	○		○				●				●	●	○			●	●		VL	L	VL	9		
Musical instrument repairers and tuners			○		○		○		●							○	○		VL	L	VL	9		



	Personal Skills									Work Characteristics											Occupational Characteristics			
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Vending machine servicers and repairers	○						●			●		●	○				●				L	L	VL	9
Construction Trades Occupations																								
Bricklayers and stonemasons					○					●			○	●			●	●			VL	VH	VL	9
Carpenters	○		○				●			●		●	●	●			●	○			L	H	L	9
Carpet installers										●			○				●	○			L	H	VL	10
Concrete masons and terrazzo workers					○					●			●	○			●	●			VL	H	VL	9
Drywall workers and lathers					○					●			○				●	●			VL	H	VL	10
Electricians	○		○				○			●		●	○	○			●	○			VL	VH	VL	9
Glaziers					○					●		○	●	●			●	●			VL	H	VL	9
Insulation workers										●		○	○	○			●	●			VL	H	VL	10
Painters and paperhangers					○					●		○		●			●	○			L	H	VL	9
Plasterers					○					●		○		○			●	●			VL	H	VL	9
Plumbers and pipefitters	○		○				●			●			○	○	○		●	○			VL	VH	VL	9
Roofers										●		●	●	●			●	○			L	H	VL	10
Sheetmetal workers	○									●		●	●				●	●			VL	H	VL	10
Structural and reinforcing ironworkers			○				○			●		●	●	○			●	●			VL	VH	VL	9
Tilesetters					○					●			○				●	○			L	H	VL	9
Production Occupations																								
Assemblers																								
Precision assemblers							●						●		○		○	○	○		VL	VH	VL	8
Blue-collar worker supervisors						●		●		○					○		○				VL	VH	L	8
Fishing, hunting, and forestry occupations																								
Fishers, hunters, and trappers										●	○	○	●	●	○		●			●	L	L	VL	10
Forestry and logging occupations			○							●	○	●	●	●	○		●	○	○		L	H	VL	11
Food processing occupations																								
Butchers and meat, poultry, and fish cutters												●	●				●				VL	L	VL	10
Inspectors, testers, and graders	○												○		○		○	○			VL	H	L	8
Metalworking and plastics-working occupations																								
Boilermakers			○				●			●		○	●				●		○		VL	VH	VL	9
Jewelers			○	○	●	●	○						○		○			●			H	L	VL	7

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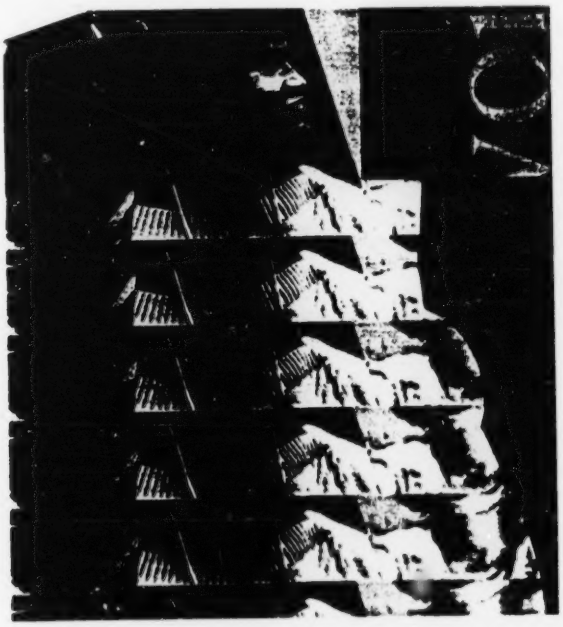
Machinists and tool programmers	○		○	○			●			○	●				○	○		VL	H	VL	8
Metalworking and plastics-working machine operators				○			○			●	●		●		○	○		VL	L	L	10
Tool and die makers	○		○	○			●			○	●				○		○	VL	VH	VL	9
Welders, cutters, and welding machine operators			○				○			●	●				●	○	○	VL	H	VL	10
Plant and systems operators																						
Electric power generating plant operators and power distributors and dispatchers	○		○	○			●			○	●		●		○			VL	VH	VL	9
Stationary engineers	○		○	○			●			●	●		●		○			VL	VH	VL	9
Water and wastewater treatment plant operators	○		○	○			●			●	●	○	●		○			VL	H	VL	9
Printing occupations																						
Bindery workers											●				○		○	VL	L	VL	10
Prepress workers		○		○							●		●				○	VL	H	VL	9
Printing press operators							○				●		●		○		○	VL	H	VL	10
Textile, apparel, and furnishings occupations																						
Apparel workers										●	●				○	○	●	L	VL	L	9
Shoe and leather workers and repairers					○					●	●				○	○		H	L	VL	9
Textile machinery operators										●	●		●		○	○	●	L	L	VL	10
Upholsterers					○					○	●				●	○	○	L	L	VL	9
Woodworking occupations										●	●				○	●		VL	L	VL	9
Miscellaneous production occupations																						
Dental laboratory technicians	○		○		○						●				○			H	H	VL	9
Electronic semiconductor processors	○		○	○			○				●		●			○	●	VL	L	VL	10
Ophthalmic laboratory technicians	○										●				○	○		L	L	VL	9
Painting and coating machine operators										●	●		●		○	○		VL	H	VL	10
Photographic process workers					○					●	●		○			○		H	L	VL	10
Transportation and Material Moving Occupations																						
Busdrivers						○			●	○	●	●	○	●	○	○		VH	L	L	10
Material moving equipment operators									●		●	●	●		●	●		VL	H	L	10
Rail transportation occupations						○	○		●	●	○	●	○	●	○	○		VL	H	VL	8

	Personal Skills								Work Characteristics										Occupational Characteristics			
	Math skills	English skills	Science skills	Computer skills	Artistic/creative skills	Persuasive/interpersonal skills	Mechanical ability	Leadership/managerial ability	Travel between worksites	Overnight travel away from home	Hazardous duties/conditions	Operates machines or equipment	Outdoor work	Irregular work schedule	Job stress/pressure	Physically demanding	Economically sensitive	Geographically sensitive	Part time availability	Median earnings	Expected job openings*	Education and training
Taxidrivers and chauffeurs					○			●		●	●	○	●	○	○	○		H	L	VL	11	
Truckdrivers								●	●	●	●	○	●	○	●	●		L	H	H	11	
Water transportation occupations	○		○				○	●	●	●	●	●	●		●	●	○	VL	H	VL	8	
Handlers, Equipment Cleaners, Helpers, and Laborers												○			●	○		H	L	VH	11	

*"Expected job openings" represents a projection of the actual number of jobs that will be available due to growth and total replacement needs—not the outlook for occupational growth as a whole.



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